

FLEX

PHARMACEUTICAL TABLET COATERS



IMA  **THOMAS**
Solid Dose Solutions

FLEX SERIES

FLEX SERIES IS THOMAS PROCESSING'S FLAGSHIP TABLET COATING PLATFORM — BUILT TO LEAD, BUILT TO LAST.

Engineered for unmatched flexibility, speed, and cleanability, FLEX sets the standard in batch coating technology. Whether you're running clinical batches or full-scale production, FLEX delivers the performance, consistency, and reliability trusted by leading pharmaceutical manufacturers worldwide. It combines engineering excellence with practical flexibility — making FLEX the gold standard in batch coating.



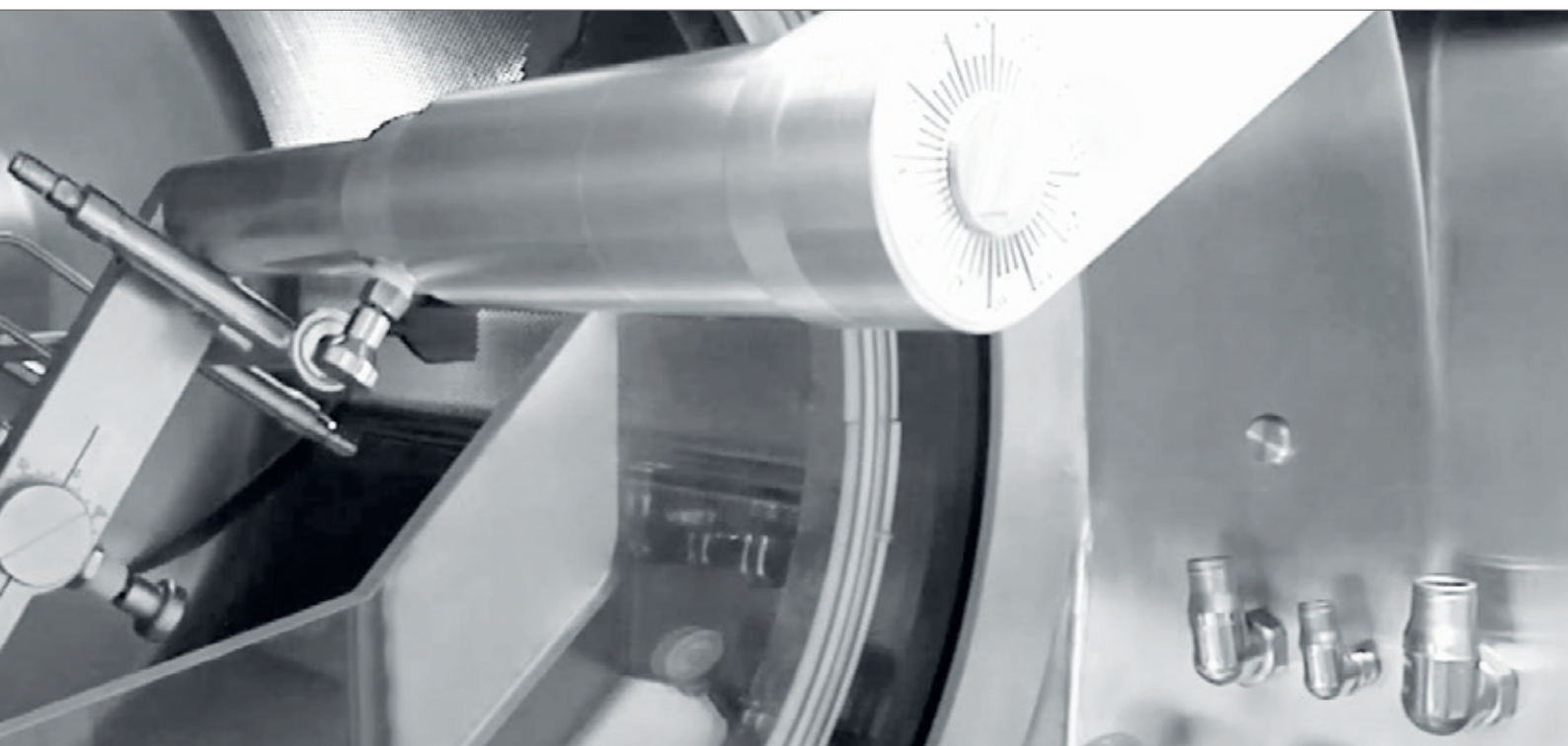
FLEX 05

FLEX 05 extends the FLEX Series platform to laboratory and small-scale production. Designed for maximum versatility, FLEX 05 supports a full range of coating processes — from high weight gain to modified release and drug layering — with precise process control and validated spray and airflow delivery. Its compact, benchtop design with integrated HMI and data acquisition makes FLEX 05 the ideal choice for rapid product development, feasibility studies, and early-stage clinical manufacturing.



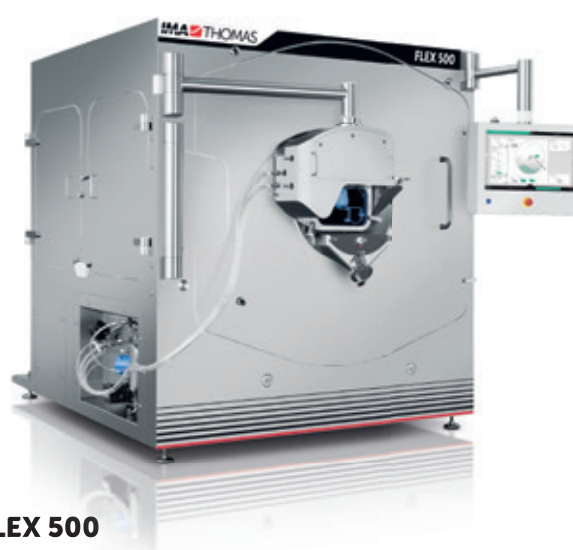
FLEX 100

FLEX 100 delivers full production capability in a compact, versatile footprint — ideal for smaller batch sizes, specialty products, and high-value compounds. With rapid changeover, excellent cleanability, and exceptional coating uniformity, FLEX 100 supports both dedicated production and flexible, multiproduct operations.



FLEX 200

FLEX 200 is the versatile mid-range performer in the FLEX Series, designed for pharmaceutical companies that require maximum agility across a wide range of products and batch sizes. It delivers the same superior coating performance and cleanability as other FLEX models, with fast changeover and modular capabilities that simplify both scale-up and commercial manufacturing.



FLEX 500

FLEX 500 provides high-throughput batch coating capability for commercial production — while preserving the process flexibility and cleanability that define the FLEX Series. Designed for speed, efficiency, and scalability, FLEX 500 is ideal for high-volume operations where product quality and process reliability are paramount.

FLEX SERIES

THOMAS SPRAY BAR® — ENGINEERED FOR COATING EXCELLENCE.

The patented Thomas Spray Bar® (TSB) delivers coating performance and maintenance efficiency unmatched by traditional spray manifolds. Its innovative, fully integrated design eliminates exposed tubing in the process zone — improving airflow, preventing tablet entrapment, and enhancing spray uniformity. Trusted across all Thomas coaters — from laboratory to full-scale continuous systems — the TSB enables faster cleaning, reduced downtime, and more consistent coating results. It's one of the many reasons Thomas Processing equipment is preferred by leading pharmaceutical manufacturers worldwide.



SUPERIOR COATING PERFORMANCE

- ELIMINATES AIRFLOW DISRUPTIONS CAUSED BY EXPOSED TUBING INSIDE THE PROCESS ZONE
- SMOOTH, STREAMLINED PROFILE REDUCES TURBULENCE AND PREVENTS TABLET ENTRAPMENT
- MAINTAINS CONSISTENT SPRAY PATTERN AND COATING QUALITY, BATCH AFTER BATCH

DESIGNED FOR CLEANABILITY

- MINIMAL MECHANICAL PARTS IN THE SOLUTION DELIVERY PATH
- 25% FEWER O-RINGS THAN OTHER MANIFOLD DESIGNS
- ALL COMPONENTS EASILY ACCESSIBLE FOR CLEANING AND VISUAL INSPECTION



THOMAS SPRAY BAR (TSB) PARTS CART

Designed to keep your coating operations efficient and organized, the Thomas Spray Bar® parts cart provides a convenient way to store and transport TSB components. During cleaning or changeover, the cart ensures all parts are protected, easily accessible, and ready for fast reassembly — helping you maintain productivity and GMP compliance.

SMART MAINTENANCE DESIGN

- NO NEED TO SHUT DOWN PUMP OR DRAIN LINES DURING NOZZLE CLEANING
- SOLUTION CONTINUES CIRCULATING DURING SPRAY PAUSE; PREVENTS SOLIDS SETTLING
- NOZZLE CLEANING TYPICALLY COMPLETED IN 5–10 MINUTES — VS. 45 MINUTES WITH TRADITIONAL MANIFOLDS

MODULAR, FLEXIBLE DESIGN

- INTERCHANGEABLE TSB SECTIONS SUPPORT RAPID CHANGEOVER
- LIGHTWEIGHT SECTIONS DESIGNED FOR EASY HANDLING BY A SINGLE OPERATOR
- SANITARY TRI-CLAMP CONNECTIONS FOR FAST, GMP-COMPLIANT ASSEMBLY AND DISASSEMBLY



CONTROL SYSTEMS

MAX, the latest generation of IMA HMI, has been created paying maximum attention to User Experience and based on Visual Design to enhance User Interaction. MAX ensures prompt responsiveness, enhanced predictability and easy learning. MAX HMI is based on iFix SCADA, IoT ready, to facilitate connection with other equipment in solid-dose processing lines.



COMMUNICATION AREA

Informs and connects the people involved in production

MULTI-USER VIEW

Different content for each user profile

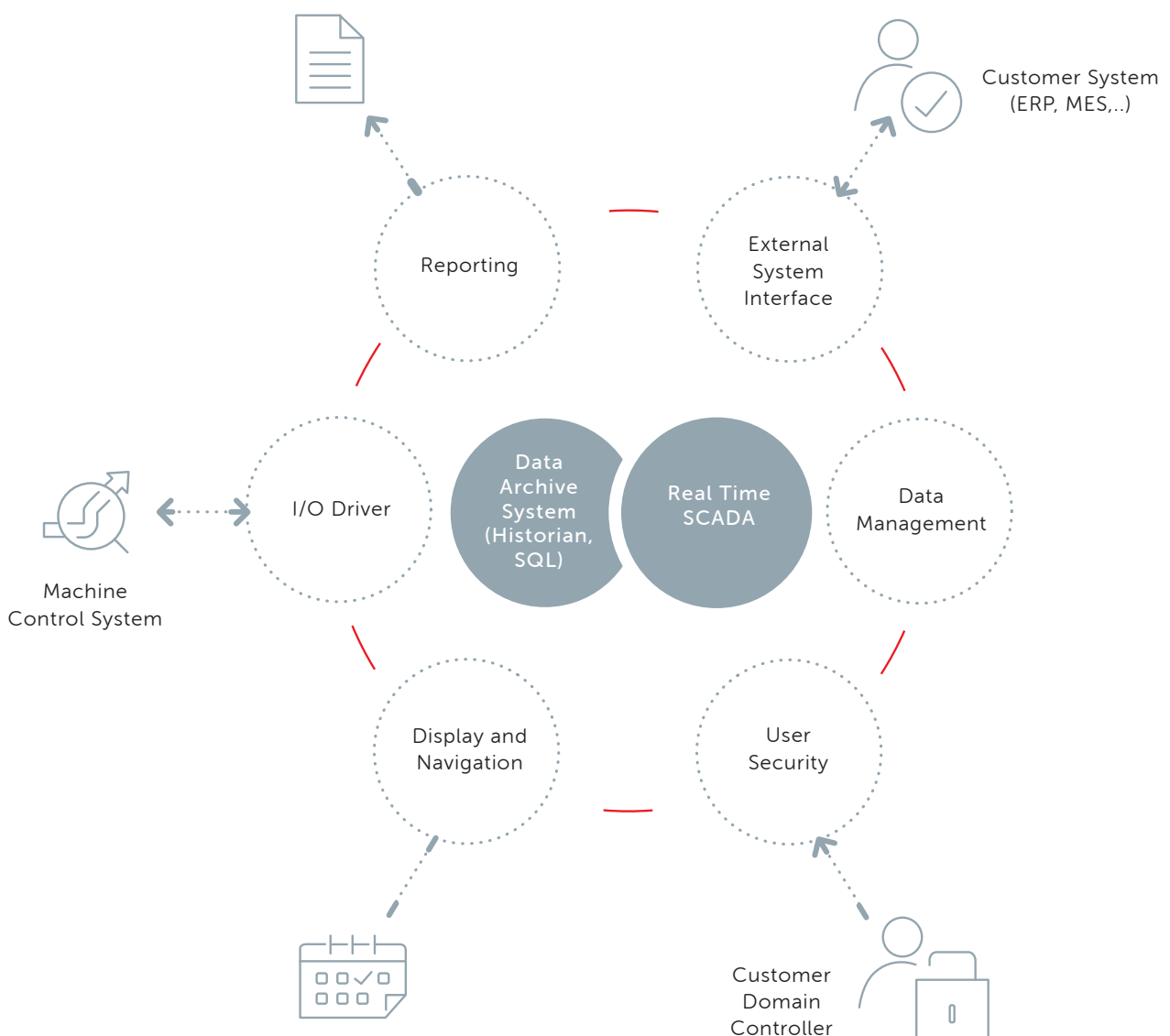
USER GUIDE AREA

Wizards to minimize errors and timing

CONFIGURABLE AREA

Collection, monitoring and data display

Communication can be extended to a plant-wide supervision system and also to IMA remote service assistance. Automatic recipes, reports and audit trails for processing or cleaning can be edited and managed to ensure maximum efficiency and consistent results in compliance with current directives and guidelines (ANSI/ISA-88, FDA CFR 21 part 11, GAMP®, MHRA GMP Data Integrity).



R&D SOLUTIONS

COMPACT FLEX SERIES
COATER FOR SMALL BATCHES
AND EARLY DEVELOPMENT.



The FLEX 05 extends the FLEX Series platform to R&D and small-scale production. Designed for maximum versatility in a compact footprint, FLEX 05 supports a wide range of coating processes — from feasibility studies to early clinical supplies — with precise control and excellent cleanability.

KEY FEATURES

- 5-LITER FULLY PERFORATED DRUM WITH ANTI-SLIDE BARS
- FLEXIBLE BATCH SIZES — COAT AS FEW AS 100 TABLETS (0.1 LITER) WITH DIVIDER PLATES
- SCHLICK™ ANTI-BEARDING SPRAY NOZZLE
- EXHAUST TEMPERATURE SETPOINT CONTROL
- PERISTALTIC PUMP WITH PRECISE FLOW CONTROL
- OPTIONAL INDEPENDENT CONTROL OF ATOMIZING AND PATTERN AIR

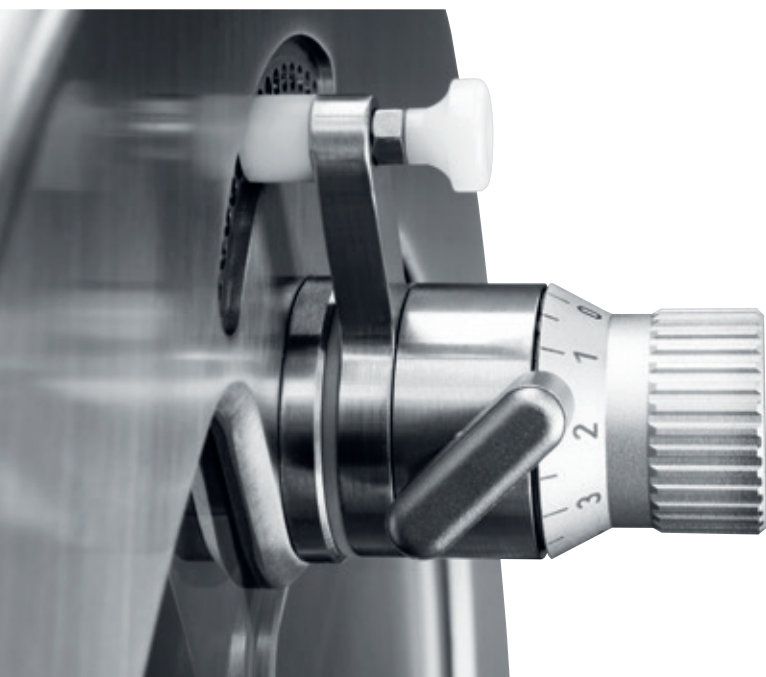
VERSATILITY

- SUPPORTS AQUEOUS AND SOLVENT PROCESSES
- FUNCTIONAL, MODIFIED RELEASE AND SPECIALTY MULTI-LAYER COATINGS
- SUITABLE FOR TABLETS, MINITABLETS, AND SOFTGELS
- OPTIONAL EXECUTION FOR POTENT COMPOUND HANDLING



CONTAINMENT AND XCU (EXCHANGEABLE COATING UNIT)

- OPERATES UNDER NEGATIVE PRESSURE; INFLATABLE SEAL ON PROCESS PORT
- SANITARY FLANGE CONNECTIONS FOR CLOSED LOADING/UNLOADING
- MANUAL SAMPLING AND NOZZLE POSITIONING WITH PROCESS PORT SEALED
- COMPLETE SEPARATION OF PRODUCT CONTACT AREA FROM MECHANICAL SPACE
- XCU OPTION: EXCHANGEABLE COATING UNIT WITH INTEGRATED DRUM, CHAMBER, PLENUM, AND PROCESS PORT
 - SELF-CONNECTING TO INLET/EXHAUST AIR PORTS AND DRUM DRIVE
 - INTEGRATED EXHAUST PLENUM EXTRACTS WITH XCU FOR EASY CLEANING OFFLINE



USABILITY

- COMPACT FOOTPRINT – JUST 30" x 40"
[774 x 1011 mm]
- BENCHTOP OR CART-MOUNTED FOR MOBILE APPLICATIONS
- 10-INCH COLOR TOUCHSCREEN HMI WITH RECIPE MANAGEMENT AND DATA ACQUISITION
- NOZZLE POSITIONING WITH GRADUATED SCALE FOR REPEATABLE SETUP
- FRONT-ACCESS MANUAL SAMPLING
- EXCELLENT VISIBILITY THROUGH FRONT WINDOW

FLEX SERIES

THE FLEX SERIES: SCALABLE INNOVATION IN TABLET COATING.

IMA Thomas' FLEX Series offers a unified platform of high-efficiency, fully perforated tablet coaters designed to support pharmaceutical manufacturing at every stage—from early development to full-scale production. Each model shares the same high-performance features, patented design innovations, and robust cleanability, while offering different capacity ranges to meet specific production needs.

Whether you're conducting R&D, scaling up for tech transfer, or running full production campaigns, the FLEX Series delivers unmatched coating performance with built-in adaptability for the future.

HIGH-PERFORMANCE FEATURES ACROSS ALL MODELS

Every FLEX model is equipped with technologies designed to maximize coating quality and process efficiency:

- EXTERNAL SPARY BAR POSITIONING FOR OPTIMAL SPRAY CONTROL AND EASE OF ADJUSTMENT
- THOMAS SPRAY BAR® WITH SCHLICK ABC TECHNOLOGY FOR CONSISTENT, REPEATABLE RESULTS
- AUTO-UNLOAD FUNCTIONALITY TO REDUCE OPERATOR INTERVENTION AND BATCH CHANGEOVER TIME
- FULLY PERFORATED DRUM DESIGN FOR IDEAL MIXING AND TURBULENCE-FREE AIRFLOW
- WASH-IN-PLACE (WIP) AND CONTAINMENT-READY OPTIONS FOR GMP COMPLIANCE AND OPERATOR SAFETY
- SUITABLE FOR FILM, SUGAR, FUNCTIONAL, AND ACTIVE MULTI-LAYER COATINGS

DRUM EXCHANGE INNOVATION

The patented Thomas drum exchange system is a defining feature of the FLEX Series. It allows operators to quickly switch out coating drums, optimizing equipment utilization while minimizing downtime.

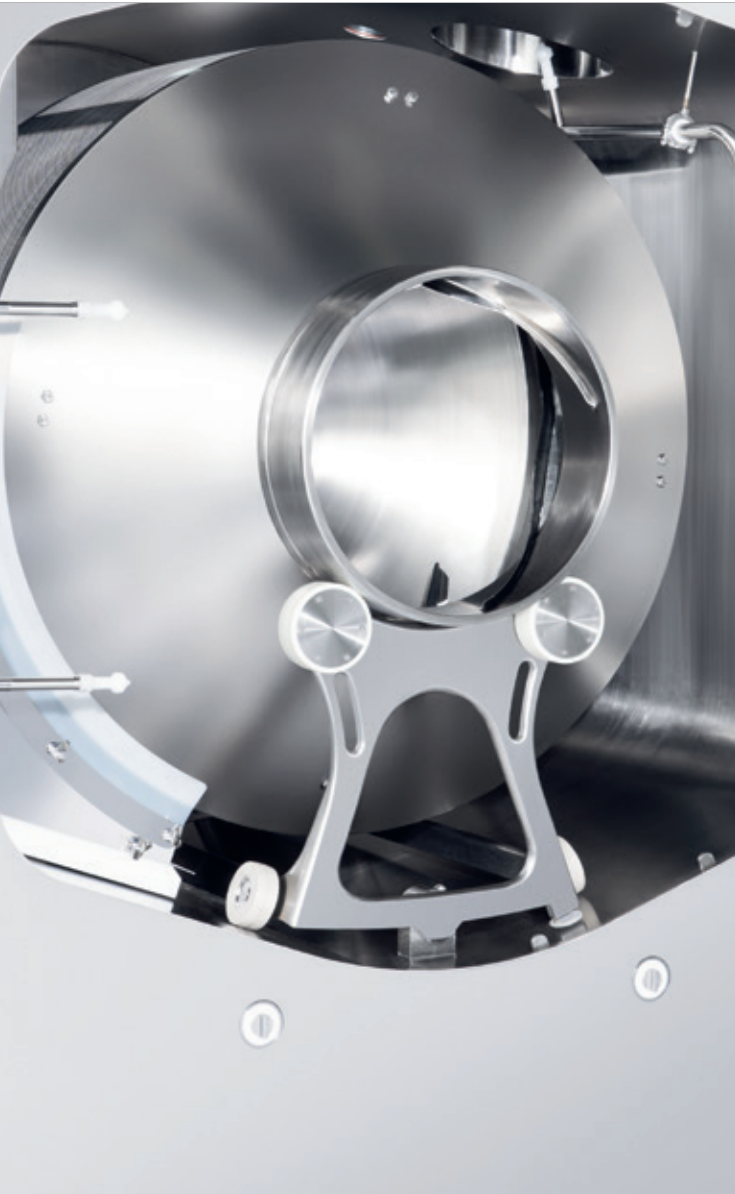
- CHOOSE DRUM CONFIGURATIONS AND BAFFLES THAT BEST SUIT YOUR PROCESS
 - DEDICATE DRUMS TO SPECIFIC COMPOUNDS OR CLIENTS TO REDUCE CROSS-CONTAMINATION RISK
 - PERFORM FAST PRODUCT CHANGEOVERS FOR INCREASED THROUGHPUT AND SCHEDULING FLEXIBILITY
 - SIMPLIFY CLEANING AND INSPECTION WITH REMOVABLE DRUMS
 - LOWER FACILITY INVESTMENT BY CONSOLIDATING CAPABILITIES INTO ONE COATER PLATFORM
-



FLEX SERIES MODEL COMPARISON

MODEL	FLEX 100	FLEX 200	FLEX 500
Exchangeable drums (biconical and cylindrical designs available)	6	4	8
Batch Size – minimum in smallest drum	2 l	30 l	40 l
Batch Size – maximum in largest drum	125 l	325 l	920 l

FLEX SERIES



GAME-CHANGING CYLINDRICAL DRUMS

Cylindrical coating drums deliver exceptional process stability and efficiency — and are available for every FLEX production model. Their geometrically streamlined design increases usable coating volume while optimizing airflow through the tablet bed. With a longer perforated section and larger plenum area, cylindrical drums enable superior mixing, higher spray efficiency, and faster throughput — all without increasing the equipment's footprint.

Key benefits:

- CONSISTENTLY HIGH COATING QUALITY
- MAXIMUM COATING EFFICIENCY
- SUPERIOR MIXING AND PROCESS STABILITY
- TURBULENCE-FREE AIRFLOW WITHOUT INTERRUPTION

PRECISE SOLUTION DELIVERY FOR REPEATABLE RESULTS

The FLEX Series solution delivery system provides precise, stable flow for consistent coating results. With integrated recirculation and flexible flow control options, it supports efficient operation, clean design, and easy process validation.

Solution delivery includes:

- FUNCTIONALITY WITH PERISTALTIC PUMPS FOR MOST AQUEOUS AND SOLVENT COATING PROCESSES — FILM, ENTERIC, FUNCTIONAL AND DRUG LAYERING
- ALTERNATE PUMP AND LINE CONFIGURATIONS FOR SUGAR COATING APPLICATIONS
- CHOICE OF FLOW MEASUREMENT METHODS:
 - VOLUMETRIC FLOWMETER
 - MASS FLOWMETER
 - SOLUTION TANK ON A FLOOR SCALE
- RECIRCULATION SYSTEM ENSURES STEADY SOLUTION MOVEMENT AND PREVENTS SETTLING OF SOLIDS DURING SPRAY PAUSE CYCLES



ENGINEERED FOR CLEANABILITY

Thomas FLEX coaters are engineered for fast, effective cleaning — whether manual or fully automated. The system's "total access" design supports swabbing and inspection, while integrated Wash-In-Place (WIP) features enable repeatable, recipe-driven cleaning cycles for high-potency and multiproduct operations.

Wash-In-Place features include:

- **SANITARY CONSTRUCTION WITH SMOOTH, SLOPED SURFACES FOR COMPLETE DRAINAGE AND DRYING**
- **ROTATING NOZZLES FOR COMPLETE INTERNAL WASH COVERAGE**
- **ZONED CIRCUITS WITH INDEPENDENT CONTROL VALVES**
- **AUTOMATED CLEANING SEQUENCES MANAGED BY RECIPE**
- **OPTIONS FOR DETERGENT DOSING, SENSORS, AND WASH SKIDS**

CONTAINMENT WITHOUT COMPROMISE

All FLEX Series coaters are engineered with advanced automation and safety systems that limit the need for direct operator access during critical process steps. These features enhance containment, reduce exposure risk, and support safe, compliant handling of potent compounds.

Containment strategies include:

- **ISOLATED PROCESSING AREAS**
- **CLOSED TRANSFERS FOR TABLET LOADING AND DISCHARGE**
- **EXTERNAL SPRAY BAR POSITIONING WITHOUT BREAKING CONTAINMENT**
- **SAMPLING SOLUTIONS FOR CONTAINED RETRIEVAL AND TRANSFER**
- **CONTROLS INTEGRATION FOR SPLIT BUTTERFLY VALVES AND DOCKING SYSTEMS**
- **AUTOMATED WASH-IN-PLACE (WIP) FUNCTIONALITY**

TECHNICAL DATA

19B



24B



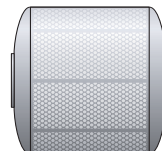
24XC



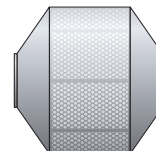
30B



30C

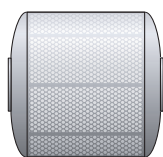


36B



FLEX 100	19B	24B	24XC	30B	30C	36B
Drum diameter	19" (440 mm)	24" (610 mm)	24" (610 mm)	30" (760 mm)	30" (760 mm)	36" (915 mm)
Drum capacity	8 l	25 l	75 l	75 l	125 l	110 l
Airflow range	200 - 1,000 CFM (340 - 1,700 m³/h)					

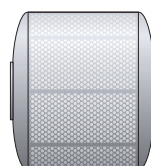
36C



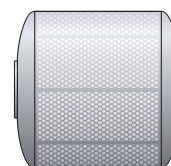
48B



48C



48XC



FLEX 200	36C	48B	48C	48XC
Drum diameter	36" (915 mm)	48" (1,220 mm)	48" (1,220 mm)	48" (1,220 mm)
Drum capacity	110 l	190 l	250 l	325 l
Airflow range	750 - 2,500 CFM (1,275 - 4,250 m³/h)			1,000 - 4,000 CFM (1,700 - 6,800 m³/h)

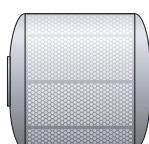
48B



48C



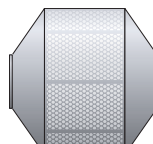
48XC



60B



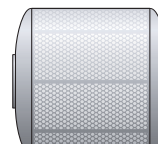
60XB



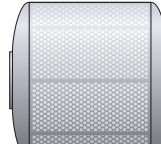
60C



60XC

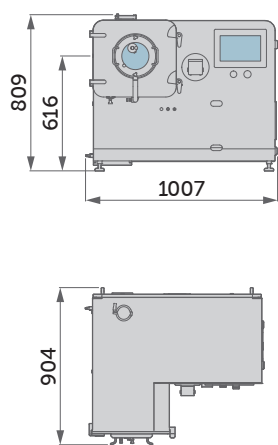


65XC

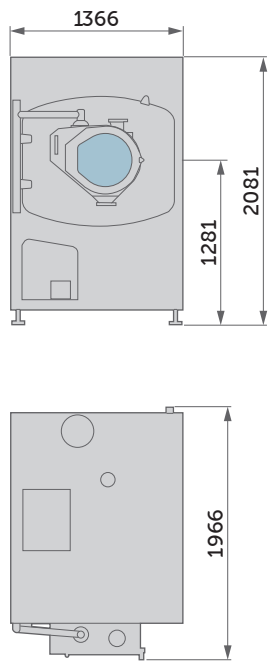


FLEX 500	48B	48C	48XC	60B	60XB	60C	60XC	65XC
Drum diameter	48" (1,220 mm)			60" (1,525 mm)				65" (1,650 mm)
Drum capacity	190 l	250 l	325 l	460 l	530 l	530 l	750 l	920 l
Airflow range	750 - 2,500 CFM (1,275 - 4,250 m³/h)		1,000 - 4,000 CFM (1,700 - 6,800 m³/h)			1,250 - 5,000 CFM (1,700 - 6,800 m³/h)	2,000 - 7,000 CFM (3,400 - 11,900 m³/h)	

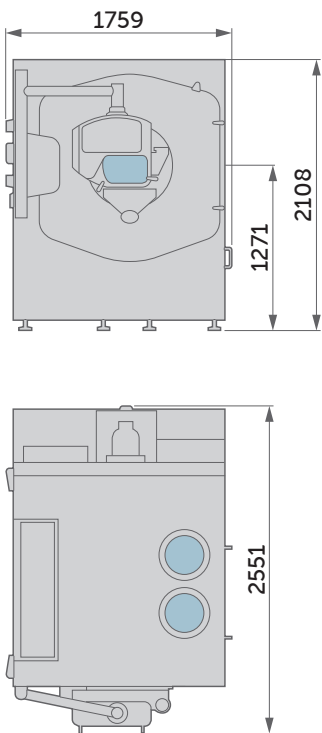
FLEX 05



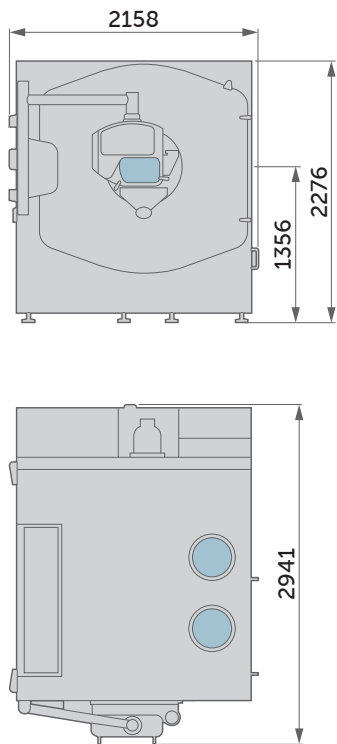
FLEX 100



FLEX 200



FLEX 500



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